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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,763	12/27/2005	Patrice Mauriac	270,388	8762

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EXAMINER	
HELM, CARALYNNE E	
ART UNIT	PAPER NUMBER
1615	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,763	MAURIAC ET AL.	
	Examiner	Art Unit	
	CARALYNNE HELM	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-26 and 28-42* is/are pending in the application.

4a) Of the above claim(s) *30 and 35-42* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-26, 28-29, and 31-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Note to Applicant: References to paragraphs in non-patent literature refers to full paragraphs (e.g. 'page 1 column 1 paragraph 1' refers to the first full paragraph on page 1 in column 1 of the reference)

Election/Restrictions

To summarize the current election, applicant elected Group I where the active ingredient is only in the core.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 32, and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 32 and 34 use the open ended language, "comprised between," to define a molar ratio range and a thickness range, respectively. According to MPEP 2111.03, "[t]he transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., > Mars Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004)". Based upon this description, the

ranges recited as being “comprised between" two values actually recite boundless ranges.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The four factual inquiries of Graham v. John Deere Co. have been fully considered and analyzed in the rejections that follow.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chou et al. (US PGPub No. 2004/0009222).

Chou et al. teach a co-extruded, implantable drug delivery device composed of a core and outer skin (film) configuration (see paragraph 8). The drug is taught present in the core (see paragraph 9). Further, PLGA is taught as an envisioned polymer in the core and skin (see paragraphs 10-11, 35 and claims 1, 12 and 13). In addition, a drug loading level of 40% is taught (see paragraph 35). Based upon these teachings, where PLGA is specifically taught in the core and skin, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have PLGA simultaneously in both regions where the drug composed 40% of the core. Therefore claim 22 is obvious over Chou et al.

Claims 22 , 26, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou et al. as applied to claim 22 above, and further in view of Talton (US Patent No. 7,063,748), Belenkaya et al. (US PGPub No. 2003/0069369), and Byon & Yoon (US Patent No. 6,702,850).

Chou et al. teach a co-extruded, implantable drug delivery device composed of a core and outer skin (film) configuration (see paragraph 8). The drug is taught present in

the core at 40% (see paragraphs 9 and 35). Further PLGA is taught as the polymer in the core and skin (see paragraphs 10-11, 35 and claims 1, 12 and 13). The outer skin is taught to modify the release of the drug from the core (see paragraph 35). Chou et al. do not explicitly teach the presence of hydrophilic excipients in the coating film.

Talton teaches polymeric blends applied as coatings to modify the release rate of drug containing solids (see column 7 lines 27-42 and column 21 lines 4-19; instant claim 26). PLGA is particularly preferred as a polymer while polyvinylpyrrolidone (PVP) is also taught as an envisioned polymer in such a coating (see column 7 lines 34-36 and column 21 lines 10-11 and17-19; instant claim 29). Talton does not specifically teach relative proportions of polymers to use in their taught coatings.

Belenkaya teach PLGA and PVP as biodegradable and biocompatible polymers known for use together at an 80/20 ratio in the context of implants (see paragraphs 9 and 41). In addition, Byon & Yoon teach PLGA and PVP in a coating used for drug delivery on an implantable device (see claims 1 and 2). Thus a blend of PVP and PLGA was a known coating option within the technical grasp of one of ordinary skill and its success would have been anticipated. In view of these teachings taken together, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ an 80/20 PLGA/PVP coating as the outer skin in the invention of Chou et al. Therefore claims 22, 26, and 28-29 are obvious over Chou et al. in view of Talton, Belenkaya and Byon & Yoon.

Claims 22 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dorta et al. (International Journal of Pharmaceutics 2002 248:149-156).

Dorta et al. teach a multilayered implant consisting of three stacked layers where only the center layer (core) contains drug (see page 151 section 2.3.3; instant claim 22). Each layer contains 63/37 (lactic acid to glycolic acid) PLGA (see page 150 section 2.1). The thickness of the drug free layers (film coating) is taught to be 148 μm while the composite structure has a thickness of 490 μm (see page 151 section 2.3.2 and 2.3.3; instant claims 33-34). A drug free layer thickness between 10 μm and 100 μm is not explicitly taught; however, one of ordinary skill in the art at the time the invention was made would have found it obvious to optimize the thickness of the outer drug-free layers to control and/or alter the release kinetics of the drug during the course of routine experimentation. Embodiments of this multilayered device are taught with a drug loading of 3% as well as 9% (see figure 5; instant claim 22). Therefore claims 22 and 33-34 are obvious over Dorta et al.

Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maquin et al. (WO 00/33809 – see IDS) in view of Chou et al.

Maquin et al. teach an extruded subcutaneous implant composed of PLGA and peptide where the peptide is present in particle form whose sizes vary from 1 to 60 μm (see page 3 lines 3-10; instant claims 22-24). In one example, the peptide particles are taught present at 25 wt% (see page 7 lines 11-12; instant claim 22). An additional skin or outer coating film is not taught present on the device.

Chou et al. teach an extruded implant that includes an outer skin (film). Such coatings are generally known to allow for added control of the release kinetics of the contained active. In particular, the outer layer of Chou et al. is taught to minimize burst release by acting as an additional barrier between the drug/polymer matrix and the aqueous outer environment (see paragraph 35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the outer shell taught by Chou et al. to give additional control of the device release kinetics. Such an addition would allow the overall time for release to be varied without significantly modifying the size of the implant (see Maquin et al. page 7 lines 3-4). Therefore claims 22-24 are obvious over Maquin et al. in view of Chou et al.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 22-25 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 9 of U.S. Patent No. 6,620,422 in view of Chou et al.

Patent 6,620,422 teach an extruded subcutaneous implant composed of PLGA and peptide where the peptide is present in particle form whose sizes vary form 1 to 60 μm (see page 3 lines 3-10; instant claims 22-24). The peptide is taught present at 20 to 40% of the implant device. An additional skin or outer coating film is not taught present on the device.

Chou et al. teach an extruded implant that includes an outer skin (film). Such coatings are generally known to allow for added control of the release kinetics of the contained active. In particular, the outer layer of Chou et al. is taught to minimize burst release by acting as an additional barrier between the drug/polymer matrix and the aqueous outer environment (see paragraph 35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the outer shell taught by Chou et al. to give additional control of the device release kinetics. Therefore claims 22-25 are obvious over claims 1-3 of U.S. Patent No. 6,620,422 in view of Chou et al.

Response to Arguments and Declaration

Applicants' arguments and declaration, filed March 27, 2009, have been fully considered but they are not deemed to be persuasive.

Regarding rejection under 35 USC 112 second paragraph:

Applicant argues that the recitations of claims 32 and 34 are clear and unambiguous. The potential for confusion with the recitations "said molar ratio is comprised between 50/50 and 75/25" in claim 32 and "said thickness is comprised between 10 and 100 μm" in claim 34 is the use of the word "comprised". On its surface, this construction is awkward and unnecessary since applicant was able to recite desired ranges elsewhere in the claims without it (e.g. line 2 of claim 32 "an average molecular weight between 100,000 and 150,000"). In addition, the MPEP states that, "[t]he transitional term "comprising", which is synonymous with 'including,' 'containing,' or 'characterized by,' is inclusive or open-ended and does not exclude additional, unrecited elements or method steps." (see MPEP 2111.03). Based upon this interpretation, in the context of a recited range, a ratio or thickness comprised between two endpoints seems to imply that the ratio could fall between the endpoints as well as outside them.

Regarding rejection under 35 USC 103(a):

Chou et al. - Applicant makes arguments regarding the hypothetical desires of one seeking to achieve a prolonged a linear release profile based upon the teachings of Chou et al., but such properties are not a claimed part of the invention. Although the

claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant's argument that the exemplification of PCL as the core polymer is a teaching by Chou et al. away from the use of PLGA in the core is without basis. Applicant relies upon a desire for a linear release profile over a prolonged period to support this incorrect interpretation, but Chou et al. does not teach that such a release profile cannot be achieved by the PLGA core and applicant has not claimed such a profile. Chou et al. teaches that the inclusion of the PLGA skin on the PCL significantly minimizes the burst and allows for a linear release of drug for five months (see paragraph 65). Since Chou et al. teach both PLGA and PCL in the core and demonstrate a similar release profile when they are each uncoated, one of ordinary skill would have found it obvious to employ PLGA as the core polymer with a PLGA skin and had a reasonable expectation that a reduction in initial burst and linear release would result. Explicitly taught by Chou et al. is a 55% drug loading in a PLGA core, a 40%, 60% and 70% drug load in a PCL core; thus use of any of the small set of core polymers at this drug loading would have been obvious to one of ordinary skill in the art (see paragraphs 32 and 35). Therefore a PLGA coated, PLGA core with at most 55% drug loading was obvious from the teachings of Chou et al.

Declaration –Applicant again argues features that are not claimed, namely a long term release implant, as a basis for hypothetical thought processes of one of ordinary skill. Applicant asserts that one of ordinary skill would never have considered PLGA as a matrix for a long term implant. Kunou et al. demonstrate the success of PLGA as an

implant matrix for long term implant devices, so applicant's assertion is unfounded and incorrect (see Journal of Controlled Release 2000 68: 263-271). Further, the significance of the data presented in the declaration is unclear. In particular, the leap from the actual drug loadings taught by Chou et al. to the 20%, 28%, and 35% loadings that were demonstrated do not provide a persuasive point of comparison to the prior art. The declaration does not state that the implants tested were coated with PLGA. On this basis alone the data cannot be considered as pertinent to the Chou et al. teachings. If one were to operate under the assumption that the matrices shown in the declaration were PLGA coated, the data actually supports the obviousness rejection. In the demonstration data, the release profile in the 35% load sample is the same shape as that of the coated sample in instant figure 3B which applicant cites as the desired (although unclaimed) result. The main difference between these two profiles is the inflection point on the curve which may be explained by the 11% higher drug loading in the sample from instant figure 3B. Thus based upon applicant's demonstration, it is more evident that the invention of Chou et al. is capable of providing the same kind of long term duration and linear release as applicant's invention.

It should be noted that an example highlighting one of a set of taught polymers is not a teaching away from those that are not exemplified and is by no means a discouragement from the use of the other taught polymers. Chou et al. provides no clear teaching away from using PLGA as a core polymer. Depending on the type of drug to be delivered and the desired release rate required by the end user, one of ordinary skill would be well equipped to select a suitable core polymer from the set taught by Chou et

al. (see paragraph 65). Applicant has not claimed a product that is wholly coated, with any particular release profile, or with a particular duration upon implantation, yet these unclaimed features are the basis for hypothetical scenarios and arguments. Although applicant has asserted that their claimed product produces a result that is unexpected, they have provided nothing that demonstrates an unexpected outcome relative to what was known at the time of the invention and taught in prior art.

Chou et al. in view of Talton, Belenkaya et al., and Byon & Yoon – Applicant argues that Chou et al. teaches away from using PLGA as the core polymer and that the secondary references do not overcome this teaching. Chou et al. does not teach away from using PLGA as it is explicitly taught and claimed as the core polymer. In fact, five polymer options for the outer skin and four polymer options are taught for the core, thus each combination is readily apparent from these teachings and includes a PLGA core and outer skin. Further, Chou et al. teach a drug loading within the range taught. Therefore applicant's arguments are not persuasive.

Dorta et al. – Applicant asserts that Dorta et al. is not relevant to the invention. As detailed in the rejection, Dorta et al. teach a multilayered PLGA device that can be interpreted as having a core and coating that covers its upper and lower surface. There are no claim limitations drawn to a particular portion of the core being covered by the coating layer. Therefore applicant's traversal on these grounds is not persuasive.

Maquin et al. in view of Chou et al. – Applicant only argues the teachings of one of the two references cited and uses elements (drug release profile) that are not recited in the claims as a basis for this argument. In response to applicant's arguments against

the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding nonstatutory obviousness-type double patenting rejection:

The rejection presented was in view of a secondary reference and this combination is not addressed in the arguments. Although applicant asserts that no feature of the amended claim 22 overlaps with that of claim 1 in US Patent No. 6,620,422, the same argument later details that the patent recites a composition with 1 to 60 μm peptide particles dispersed in a PLGA matrix. These features do overlap with those instantly claimed. When coupled with the teachings of Chou et al., as recited in the rejection, claims 1-3 and 9 make obvious to invention of instant claims 22-24.

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The rejections and/or objections detailed above are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

Conclusion

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CARALYNNE HELM whose telephone number is (571)270-3506. The examiner can normally be reached on Monday through Thursday 8-5 (EDT).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on 571-272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Caralynne Helm/
Examiner, Art Unit 1615

/MP WOODWARD/
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